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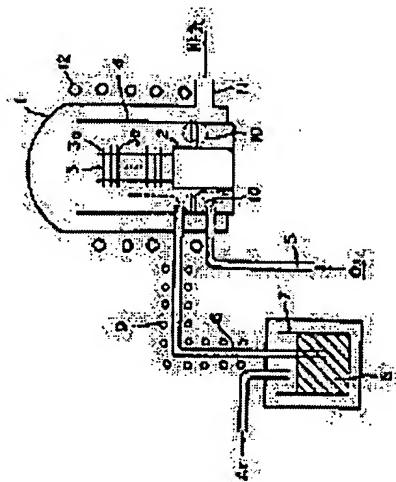
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(54) MANUFACTURE OF SEMICONDUCTOR ELEMENT AND THERMAL CVD DEVICE

(57)Abstract:

PURPOSE: To enable a high-quality Ta₂O₅ film to be formed by reducing an amount of C within a CVD-Ta₂O₅ film by using an O₃ gas as a species for oxidizing of Ta(OC₂H₅)₅.

CONSTITUTION: A wafer 3 is placed on a boat 3a and it is placed on a temperature-preserving cylinder 2, an outer tube 1 and an inner tube 4 are heated by a heater 12, and an intake tube 6 is heated by a heater 9. O₃ gas is taken into the inner tube 4 within a furnace through an intake tube 5 and is filled into a container 7. Ta(OC₂H₅)₅ is introduced into the inner tube 4 through the intake tube 6 with Ar as a carrier gas. The Ta(OC₂H₅)₅/O₃ mixed gas which is introduced into the inner tube 4 is reacted with O₃ gas as an oxidation activation seed, thus forming Ta₂O₅ film on the wafer 3. Thus, since O₃ which is more active than O₂ is utilized as an active species for oxidizing Ta(OC₂H₅)₅, the amount of C contained within CVD-Ta₂O₅ film to be formed can be reduced and leak current can be restricted, thus enabling electrical characteristics to be improved.



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